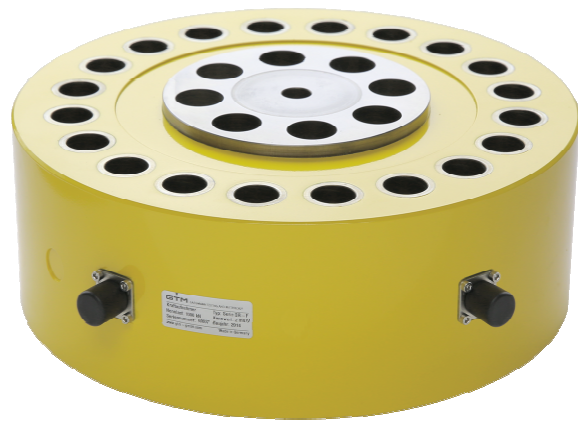


Data sheet

Force Transducer

Series DR-F

50 kN – 2,5 MN



Benefits/Application

- Accuracy class from 0.04
- Two built-in accelerometers
- For static and dynamic tensile and compressive forces
- High resonant frequency
- 6-wire connection technology
- Popular connection dimensions

Options/Accessories

- Second redundant measuring circuit

Technical data

	Nominal force compression/tension	$\pm F_{nom}$	kN	50	125	250	500	1000	1500	2000	2500
Metrological Data	Accuracy class			0,04			0,05	0,06		0,08	
	Linearity error	d_{lin}	%	0,04			0,05	0,06		0,08	
	Hysteresis	h	%	0,04			0,05	0,06		0,08	
	Repeatability (f.s.)		%	0,025							
	Zero error	f_0	%	0,01							
	Creep		%	0,025							
	Temperature effect on characteristic value per 10 K	TK_c	%/10 K	0,015							
	Temperature effect on zero signal per 10 K	TK_0	%/10 K	0,015							
	Eccentricity effect		%/mm	<0,01							
	Bending moment effect		%/N·m	<0,01							
	Electrical Data	Rated characteristic value	C_{nom}	mV/V	2						
Characteristic value tolerance		d_c	%	0,25							
Zero signal deviation		$d_{s,0}$	%	1							
Input resistance		R_e	Ω	375							
Output resistance		R_a	Ω	280 - 360							
Insulation resistance		R_{is}	Ω	$>10^9$							
Operating range of excitation voltage		$B_{U,G}$	V	0,5 - 12							
Protection (DIN EN 60529)				67							
Mechanical Data	Rated Displacement	s_{nom}	mm	0,03	0,04	0,06	0,07	0,08	0,09	0,11	0,12
	Spring rigidity	c_{ax}	kN/mm	1650	3125	4200	7150	12500	16650	18250	21000
	Mass	m	kg	4,3	4,3	10,3	29,1	44,9	93	155,7	192,9
	Proportionate moving mass	m_{mess}	kg	1,1	1,1	3	7,9	12,7	40	47,1	64,5
	Fundamental resonant frequency	f_G	kHz	6,2	8,5	6	4,8	5	3,3	3,2	2,8
	Permissible oscillation stress for the transducer ¹⁾		%	± 100							

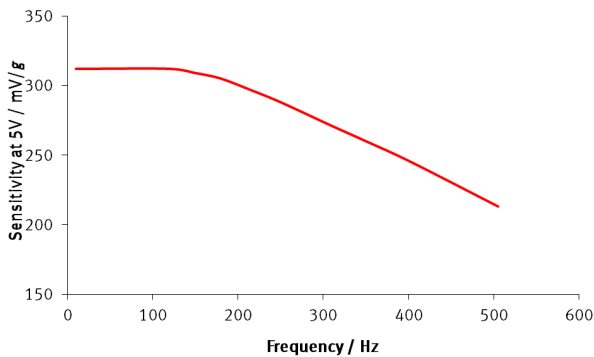
1) Recommendation: Please observe the measures of VDI 2230 Pages 1 and 2 regarding to durability of flange connection.

Technical data

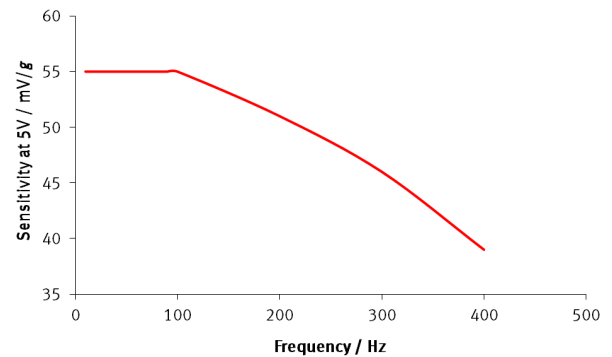
Limits	Nominal force compression/tension	$\pm F_{nom}$	kN	50	125	250	500	1000	1500	2000	2500
	Force limit		%	230							
	Breaking force		%	400				300			
	Lateral force limit		%	100							
	Permissible eccentricity	e_G	mm	25				20			
	Bending moment limit	$M_{b,zul}$	N·m	1,75	4,5	7,5	15	30	45	60	75
	Rated temperature range	$B_{T,nom}$	°C	-10 - +45							
	Operating temperature range	$B_{T,G}$	°C	-30 - +85							

Acceleration sensors

Typ		0	I
Rated acceleration	g	6	37
Rated sensitivity at 5 V (ratiometric)	mV/g	312	55
Static output voltage at 0 g	V _{DC}	2,5 ± 0,2	2,5 ± 0,5
Typical bandwidth	kHz	0,4	0,4
Excitation voltage	V _{DC}	5 ± 0,25	
Linearity error	%	2	
Resonant frequency	kHz	5,5	22



Typ 0 (6g)

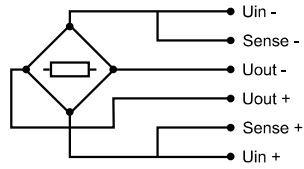


Typ I (37g)



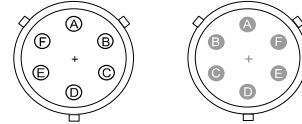
Cable connection

Measurement Bridge



Connection pluggable¹⁾²⁾

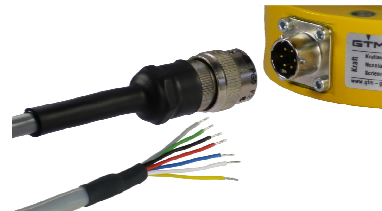
6-pin Amphenol
cable connector: - appliance inlet:



Connection		Wire color	Pin
Supply voltage (+)	U _{in+}	blue	A
Supply voltage (-)	U _{in-}	black	D
Measurement signal (+)	U _{out+}	white	B
Measurement signal (-)	U _{out-}	red	C
Sense (+)	Sense+	green	F
Sense (-)	Sense-	grey	E
Shielding			Housing

1) View too weldingside

2) Female Amphenol typ: MIL-C-26482 series 1 ; bayonet catch

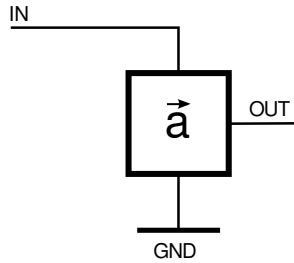


Connection pluggable

- Cable is not standard scope of supply
- Cable length 5 m. Other cable lengths on request

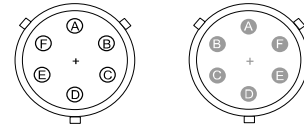
Cable connection

Acceleration sensor



Connection pluggable¹⁾²⁾

6-pin Amphenol
cable connector: - appliance inlet:



Connection		wire color	Pin (Type 0)	Pin (Type I)
Supply voltage 5 V	IN	blue	A	
Output voltage	OUT	white	B	
Ground	GND	grey	E	
Supply voltage 5 V	IN	green		F
Output voltage	OUT	red		C
Ground	GND	black		D

1) View too weldingside

2) Female Amphenol typ: MIL-C-26482 series 1 ; bayonet catch



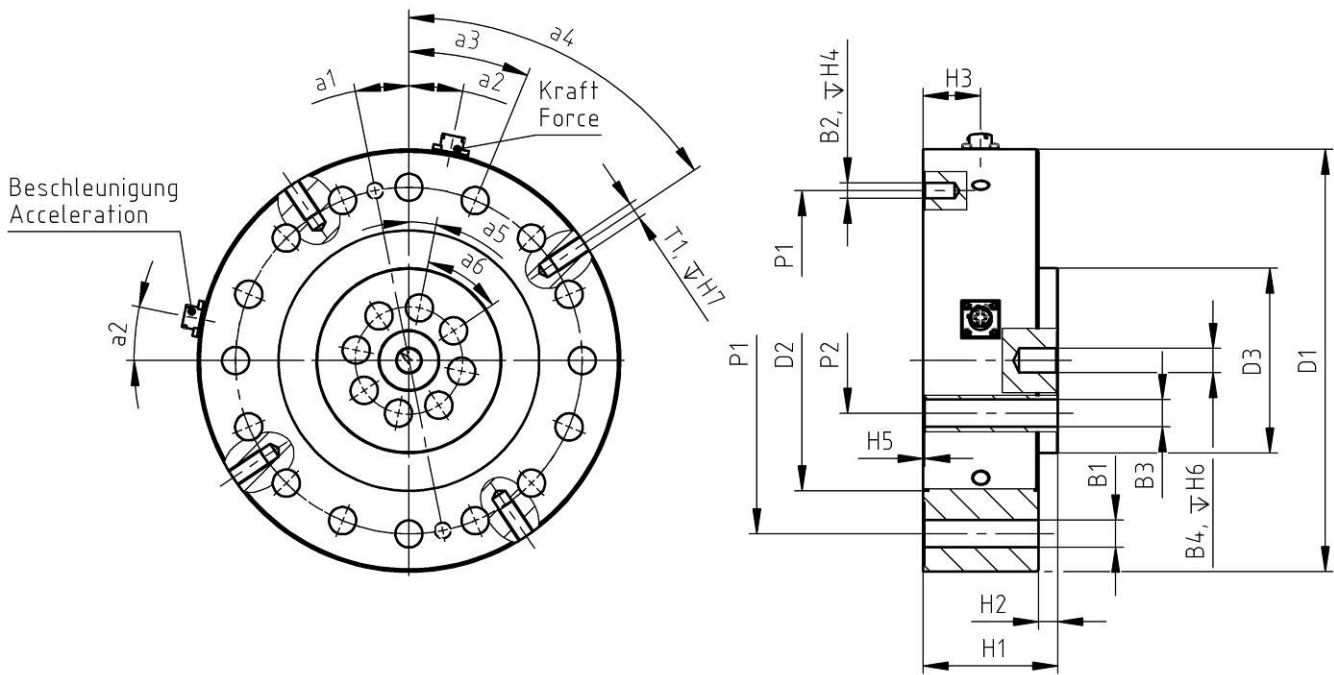
Connection pluggable

- Cable is not standard scope of supply
- Cable length 5 m. Other cable lengths on request

Option: 2.Measuring circuit

- Second redundant measuring circuit
- In case of two circuits the technical data are similarly valid for both circuits

Mating dimensions



Nominal force compression/tension	$\pm F_{norm}$	kN	50	125	250	500	1000	1500	2000	2500
Bore	$\varnothing B_1$	mm	10,5	13	17,5	22	26	33	30	
Bore	$\varnothing B_2$	mm	10 _{H7}							
Bore	$\varnothing B_3$	mm	10,5	17	17,5	26	33			
Bore	$\varnothing B_4$	mm	16 _{H7}							
Diameter	$\varnothing D_1$	mm	153,9	203,2	279	304,8	393,7	480	520,7	
Diameter	$\varnothing D_2$	mm	108 _{H8}	138,9 _{H8}	172,1 _{H8}	195 _{H8}	254,4 _{H8}	310 _{H8}	340 _{H8}	
Diameter	$\varnothing D_3$	mm	61,2 _{h9}	95,5 _{h9}	122,2 _{h9}	144,3 _{h9}	196,9 _{h9}	232 _{h9}	267,9 _{h9}	
Pitch circle diameter	$\varnothing P_1$	mm	130,3 $\pm 0,1$	165,1 $\pm 0,1$	229 $\pm 0,1$	241,3 $\pm 0,1$	322,1 $\pm 0,1$	385 $\pm 0,2$	419,1 $\pm 0,2$	
Pitch circle diameter	$\varnothing P_2$	mm	45 $\pm 0,1$	71 $\pm 0,1$	105 $\pm 0,1$	150 $\pm 0,1$	180 $\pm 0,2$	215 $\pm 0,2$		
Thread	T_1		-				M12			
Height	H_1	mm	44,5 $^{-0,1}$	63,5 $^{-0,1}$	88,9 $^{-0,1}$	114,3 $^{-0,1}$	139,7 $^{-0,1}$	155 $^{-0,1}$	158,8 $^{-0,1}$	
Height	H_2	mm	3,1	6,3	12,7	6,3	12,7	6,3		
Height	H_3	mm	20,5	28,6	37,9	54	63,5	74,5		
Height	H_4	mm	17							
Height	H_5	mm	0,5				1			
Height	H_6	mm	10				20			
Height	H_7	mm	-				24			

Nominal force compression/tension	$\pm F_{\text{norm}}$	kN	50		125		250		500		1000		1500		2000		2500	
Angle	a_1		15°		11,25°		9°		7,5°		6,43°							
Angle	a_2		15°		11,25°		9°		7,5°		6,43°							
Angle	a_3		12x30°		16x22,5°		20x18°		24x15°		28x12,86°							
Angle	a_4				-		56,25°		63°		52,5°		57,8°					
Angle	a_5		15°		11,25°		9°		7,5°		6,43°							
Angle	a_6				8x45°				12x30°		14x25,71°							

Änderungen vorbehalten. Alle Angaben beschreiben unsere Produkte in allgemeiner Form. Sie stellen keine vereinbarte Beschaffenheit im Sinne des § 434 Abs. 1 BGB dar.



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